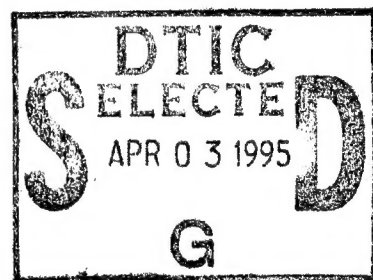


NAVAL POSTGRADUATE SCHOOL MONTEREY, CALIFORNIA



THESIS



A PROPOSAL TO CHANGE KOREAN DOD REGULATIONS FOR CONTRACT TYPES

by

Heonkyo Lim

December, 1994

Principal Advisor:

Mark W. Stone

Approved for public release; distribution is unlimited.

19950329 040

REPORT DOCUMENTATION PAGE			Form Approved OMB No. 0704-0188	
Public reporting burden for this collection of information is estimated to average 1 hour per response, including the time for reviewing instruction, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302, and to the Office of Management and Budget, Paperwork Reduction Project (0704-0188) Washington DC 20503.				
1. AGENCY USE ONLY (Leave blank)		2. REPORT DATE December 1994		3. REPORT TYPE AND DATES COVERED Master's Thesis
4. TITLE AND SUBTITLE A PROPOSAL TO CHANGE KOREAN DOD REGULATIONS FOR CONTRACT TYPES			5. FUNDING NUMBERS	
6. AUTHOR(S) Heonkyo Lim				
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) Naval Postgraduate School Monterey CA 93943-5000			8. PERFORMING ORGANIZATION REPORT NUMBER	
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES)			10. SPONSORING/MONITORING AGENCY REPORT NUMBER	
11. SUPPLEMENTARY NOTES The views expressed in this thesis are those of the author and do not reflect the official policy or position of the Department of Defense or the U.S. Government.				
12a. DISTRIBUTION/AVAILABILITY STATEMENT Approved for public release; distribution is unlimited.			12b. DISTRIBUTION CODE	
13. ABSTRACT (maximum 200 words) This research focuses on the current regulations and policies of the Republic of Korea (R.O.K.) governing contract types to be used. The objectives of this research are: (1) to review the Federal Acquisition Regulation (FAR) related to contract types, (2) to identify major elements for the selection of appropriate contract type, (3) to evaluate current R.O.K regulations and laws which define contract type application, (4) to compare the FAR with that of R.O.K. regulation, (5) to recommend a proposal to change the R.O.K. regulations for best value procurement.				
14. SUBJECT TERMS Contract Type, Korean DOD Regulations, Best Value Procurement			15. NUMBER OF PAGES 64	
			16. PRICE CODE	
17. SECURITY CLASSIFICATION OF REPORT Unclassified	18. SECURITY CLASSIFICATION OF THIS PAGE Unclassified	19. SECURITY CLASSIFICATION OF ABSTRACT Unclassified	20. LIMITATION OF ABSTRACT UL	

NSN 7540-01-280-5500

Standard Form 298 (Rev. 2-89)
Prescribed by ANSI Std. Z39-18 298-102

Approved for public release; distribution is unlimited.

A PROPOSAL TO CHANGE KOREAN DOD REGULATIONS FOR
CONTRACT TYPES

by

Heonkyo Lim
Major, Republic of Korea Army
B.A., Korea Military Academy, 1985

Submitted in partial fulfillment
of the requirements for the degree of

MASTER OF SCIENCE IN MANAGEMENT

from the

NAVAL POSTGRADUATE SCHOOL
December 1994

Accession For	
NTIS CRA&I	<input checked="" type="checkbox"/>
DTIC TAB	<input type="checkbox"/>
Unannounced	<input type="checkbox"/>
Justification	
By	
Distribution /	
Availability Codes	
Dist	Avail and/or Special
A-1	

Author:

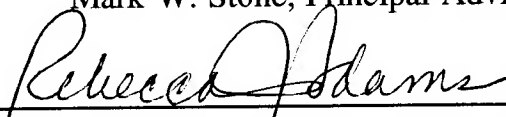


Heonkyo Lim

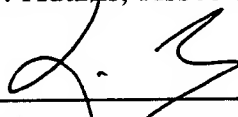
Approved by:



Mark W. Stone, Principal Advisor



Rebecca J. Adams, Associate Advisor



David R. Whipple, Chairman
Department of Systems Management

ABSTRACT

This research focuses on the current regulations and policies of the Republic of Korea (R.O.K.) governing contract types to be used.

The objectives of this research are: (1) to review the Federal Acquisition Regulation (FAR) related to contract types, (2) to identify major elements for the selection of appropriate contract type, (3) to evaluate current R.O.K regulations and laws which define contract type application, (4) to compare the FAR with that of R.O.K. regulation, (5) to recommend a proposal to change the R.O.K. regulations for best value procurement.

TABLE OF CONTENTS

I.	INTRODUCTION	1
	A. GENERAL	1
	B. OBJECTIVES	3
	C. RESEARCH QUESTIONS	3
	D. METHODOLOGY	4
	E. SCOPE OF THE STUDY	4
	F. ORGANIZATION OF THE RESEARCH	4
II.	BACKGROUND	7
	A. INTRODUCTION	7
	B. FIXED-PRICE CONTRACTS	8
	C. INCENTIVE CONTRACTS	12
	D. COST-REIMBURSEMENT CONTRACTS	14
	E. SUMMARY	18
III.	KOREAN DOD CONTRACT SYSTEMS	21
	A. CONTRACTING SYSTEM OF KOREAN DOD	21
	B. CONTRACT TYPES OF KOREAN DOD	25
	C. PROBLEMS OF USING CURRENT CONTRACT TYPES	26
	D. SUMMARY	37
IV.	CONCLUSIONS AND RECOMMENDATIONS	39
	A. CONCLUSIONS	39
	B. RECOMMENDATIONS	41

APPENDIX : PROPOSED CHANGES TO THE CONTRACT TREATMENT

REGULATION	45
LIST OF REFERENCES	53
INITIAL DISTRIBUTION LIST	55

I. INTRODUCTION

A. GENERAL

Immediate threats to South Korea's security come from North Korea. Despite the world-wide bankruptcy of communist ideology, North Korea still clings to its own fanatical ideas under the banner of "line in our own way". North Korea continues to strengthen its armed forces in spite of economic difficulties. Furthermore, North Korea is suspected of having both the intention and capability of developing nuclear devices. It is widely thought that North Korea has already developed a nuclear explosive device of some sort or is on the verge of acquiring one or two. If the North becomes a nuclear weapon state, it forces South Korea to be engaged in a heated arms race.

In retrospect, over the last 40 years, South and North Korea have been in an arms race for self-defense purposes. South Korea has had to allocate its national resources, human and material, for its defense. South Korea may need 1- 1.5 percent of its population for its standing troops, that is, according to the current figure, 400,000 as the minimum and 900,000 the maximum, based on practical necessity and affordability. Also South Korea may have to allocate 3-4 percent of its total gross national product (GNP) for its defense with special emphasis on modernizing its equipment. South Korea is currently allocating about 3.7 percent of its GNP for defense, whereas, the North allocates 20-25 percent. [Ref.1: p.38] While South Korea maintains 655,000 troops in total, the North more than 1,000,000. [Ref.2]

Meanwhile, the United states security assistance to South Korea has not only played an important deterrence role, but contributed largely to the improvement of its defense capability and overall economy. But as the Cold-War World was

ended, the U.S. strategy was changed. Jimmy Carter's 1976 campaign platform had a heavy domestic focus and proposed defense cuts. Clinton's newer Administration has placed heavy emphasis on his agenda for domestic economic renewal.[Ref.3: p.32] As a result, the U.S. government plans to withdrawal U.S. forces deployed in foreign countries, including South Korea. Through the threat posed by North Korea's suspected nuclear weapons program suspended a phased reduction of U.S.troops stationed in South Korea. South Korea has committed to assuming a progressively larger share of the burden and paying one-third of the annual cost of U.S. forces in Korea by 1995. Therefore, the strain of additional defense makes South Korea take on the burden of rebuilding the self-defense system in a short period of time.

When the U.S. withdrawal is completed, according to the South Korean Department of Defense (DOD), it will cost more than \$ 5.2 billion to get the replacement strength. This means that the sum of added cost along with the present expenditure for the national defense will be up to 8 percent of GNP.[Ref.9: p.11]

Consequently, the change of U.S. defense strategy forces the South to commit increased budget for its defense and requires more efficient allocation of resources to achieve its new strategy.

Under this situation, it is critical that South Korea should find a more efficient allocation of its defense budget so as to achieve its new strategy. Considering the current Korean DOD acquisition process, DOD will not be able to meet the new strategy without dramatic changes in its acquisition process from determining what the DOD needs, to logistic support. In addition, the Korean DOD acquisition regulations and policies require modification as well, and these must be an integral part of changes in acquisition process. Recently,

Korean DOD has placed particular emphasis on the changes of DOD regulations in order to make the existing contract system more efficient. In fact, Korean DOD senior officials have recognized that there were acquisition problems which are primarily attributed to a lack of effective DOD regulations. And they have also known that there was waste, and abuse of defense funds by the use of inappropriate contract types. Thus DOD began to make an effort to change and develop the DOD regulations which can regulate the contract system effectively - especially the contract type to be used. To follow these recent DOD activities, this thesis focuses on the revision of Korean DOD regulations for contract types.

B. OBJECTIVES

The objectives of this research are:

- (1) to review contract types described in the Federal Acquisition Regulation.(FAR)
- (2) to identify the major elements for the selection of appropriate contract type.
- (3) to evaluate current the Republic of Korea (R.O.K.) regulations and laws which define contract type application.
- (4) to compare the FAR and DOD policy with that of R.O.K. regulations.
- (5) to recommend a proposal to change the R.O.K. regulations for best value procurement.

C. RESEARCH QUESTIONS

1. Primary Question

What are the principal problems experienced in the use of current contract types and how might the Korean DOD change acquisition regulations for contract types?

2. Subsidiary Questions

- a. What is the current state of the DOD contracting system?
- b. What are the current contract types authorized to be used under DOD regulations?
- c. Which statutes, regulations and policies have been applied to the use of contract types in field contracting?
- d. What changes should be made to the regulations governing contract types suited to the DOD field contracting environment?

D. METHODOLOGY

There are several categories of source documents:

1. available books, theses on the subject of the FAR and contract types.
2. Federal Government Regulations; FAR, DFARS.
3. congressional hearings and reports of the General Accounting Office(GAO).
4. periodicals and newspapers.
5. additional information from some R.O.K. DOD officials.

E. SCOPE OF THE STUDY

The scope of this study is limited to the FAR, DFARS and R.O.K. DOD Regulations applying to contract type. Other regulations and government acts are not included since they are too broad in application.

F. ORGANIZATION OF THE RESEARCH

This research contains four chapters. Chapter I gives an introduction and the research objectives. Chapter II presents the background information on and definition of contract types described in the FAR/DFARS. Chapter III deals

with R.O.K. DOD regulations and contract system. Chapter IV provides conclusions and recommendations for a proposal to change the current R.O.K. regulations.

II. BACKGROUND

A. INTRODUCTION

The acquisition of goods and services by government entails government contracts with individuals or firms from various industries. A major concern of government acquisition and contracting is " best value buying " which ensures the purchase of a quality product at terms that represent the best overall value to the buyer. Therefore, government needs comprehensive legislation and regulations to control government acquisition.

The Federal Acquisition Regulation (FAR) is a U.S. government-wide contracting regulation.

The Federal Acquisition Regulation system is established for the codification and publication of uniform policies and procedures for all executive agencies. The Federal Acquisition Regulation System consists of the Federal Acquisition Regulation (FAR), which is the primary document, and agency acquisition regulations that implement or supplement the FAR. [Ref.4]

The FAR is implemented by departments and agencies through their own acquisition regulations which are limited in subject matter, to: (1) regulations necessary to implement FAR throughout the agency and (2) such additional policies, procedures, solicitation provisions and clauses as are required by the specific needs of the agency. [Ref.10] The FAR also provides guidance for selecting a contract type appropriate to the circumstances of an acquisition. It defines various types of contracts available to the government and describes their application, limitation and contract clauses. The FAR provides broad discretion to use the proper type of contract in a negotiated procurement, by emphasizing two basic principles: (1) the need to tailor the type of contract to the facts of each procurement, and (2) the

advantages of using fixed-price contract when possible.

Generally, the U.S. Government uses three basic types of contracts, as follows.

1. Fixed Price

- * firm-fixed price
- * fixed-price with economic price adjustment
- * fixed-price with redetermination
- * firm-fixed price, level-of-effort

2. Incentive

- * fixed-price incentive
- * cost-plus-incentive fee

3. Cost Type

- * cost-plus-fixed fee
- * cost-plus-award fee
- * cost sharing
- * cost contracts
- * time and materials
- * letter contracts

The types of contracts noted above are categorized based on the degree of cost risk assumed by the Government and the contractor respectively. They range from firm-fixed-price, which places minimum risk on the government, to cost-plus-fixed-fee, which places minimum risk on the contractor. Henceforth, this chapter first briefly describes each contract type prescribed in the FAR, and second reflect contract types used.

B. FIXED-PRICE CONTRACTS

Under the FAR, a contracting officer has a variety of fixed-price contracts from which to choose. These contracts are not subject to adjustment based on the contractor's cost experience. In fixed-price contracts, the contractor promises to deliver on time and to meet the contract specifications. If

a contractor is late, or his product doesn't meet the specifications for acceptance, the Government may terminate the contract for default and not pay the contract. In these contracts, the contractor bears a tremendous risk and has the greatest potential for reward. Thus the higher the contractor perceives the cost risk to be, the higher he will price the contract to protect him. These contracts are appropriate for goods or services that can be objectively defined and for which the risk of performance is manageable.

1. Firm-Fixed Price Contract (FFP)

The FFP is not subject to any adjustment to its total price based on variation in the cost experience of the contractor in the performance of the contract. This type of contract places the maximum cost risk upon the contractor because he assumes full responsibility, in the form of profits and losses, for all costs under or over the contract's firm-fixed-price. Thus, the contractor has the maximum profit incentive for effective control of costs. This contract type imposes a minimum administrative burden upon the contracting parties. [Ref.4 :sec. 16.201.1]

Use of the FFP contract is appropriate for acquiring off-the-shelf commercial products or commercial-type products, or other supplies or services with clear and definitive specifications.

2. Fixed-Price with Economic Price Adjustment Contract (FPE)

This type of contract is used when the contracting officer determines that its provisions are necessary to protect either the government or the contractor against significant economic fluctuations in labor or material costs, or to provide for contract price adjustment in the event of

changes in the contractor's established prices. The contract provides for the upward or downward adjustment of the stated contract price upon the occurrence of certain contingencies which are specifically defined. [Ref.4 :sec. 16.203.1]

The adjustment clause should be as simple as possible, and adjustments normally should be made in accordance with regularly published indexes. The two indexes most commonly used are the Bureau of Labor Statistics's Producer Price Index (for material) and the Wage Increase Series by Standard Industrial Classification (for labor). [Ref.12: sec.216.2] It should be noted that price adjustments of this type apply only to changes in labor rates and material costs, not to overhead and profit and not to increases in the amounts of labor or materials. This type of contract takes some of the risk away from the contractor, but there are still advantages for the government because contingencies which would otherwise be reflected in a high contract price can be identified and covered separately by a price adjustment clause. The contractor still shares the profit and losses in the ratio of 0/100 as in the firm-fixed-price contract except in the economic price adjustment contract the fixed-price might be changed using the performance of the contract upon the occurrence of a specific event.

3. Fixed-Price with Redetermination Contract (FPR)

There are two types of FPR contracts: fixed-price with prospective price redetermination, and fixed-ceiling-price with retroactive price redetermination. The former provides for a firm-fixed-price for an initial period of contract deliveries or performance and for prospective price redetermination either upward or downward at a stated time or times during the performance of the contract. It also provides for a price ceiling, when appropriate. Once

established, ceiling prices are subject to adjustment only by reason of the operation of other contract clauses. [Ref.4:sec.16.205]

The latter provides for a ceiling price and retroactive price redetermination after completion of the contract. The redetermined price should be negotiated so as to give weight to the management effectiveness and ingenuity exhibited by the contractor during performance, and the basis for such negotiation should be fully discussed with the contractor when this type of contract is negotiated. Because the price is redetermined on a completely retroactive base, this contract type (except for the price ceiling) does not provide the contractor with a calculable incentive for effective cost control. Once established, the ceiling price is subject to adjustment only if required by the operation of other contract clauses. [Ref.4: sec.16.206]

Basically, redetermination as a means of pricing is different in concept from economic adjustment. In contracts with economic adjustment, the amounts of labor and materials required to complete the contract are known, but the labor rates or the prices of material are unknown. In cases involving price redetermination, the amounts of labor and materials (and in some cases their price also) initially are unknown, but they become known with limited production experience. Because of labor and materials unknown, a firm-fixed-price contract initially would be impractical, however, enough is known so that a temporary estimated fixed price can be established. [Ref.11: p.282] The earlier the price determination can be made, the more effective this type of contract is. Thirty percent completion is typically a satisfactory redetermination point, and upward adjustment are normally limited to 10 percent or are tied directly to reliable and timely price indexes.

The FPR contract can not be used when use of a FFP or FPI contract would be appropriate, or when the contractor does not have an accounting system adequate for price redetermination.

4. Firm-Fixed-Price, Level of Effort Term Contract

[FFP(LOE)]

This type of contract requires the contractor to devote a specified level of effort over a stated period of time for a fixed dollar amount. Normally, the contract requires submission by the contractor of reports which show the results achieved through application of the required level of effort; however, payment is based on effort expended rather than on results achieved. This type of contract can be useful tool, particularly in the Research and Exploratory Development categories when the work can not be clearly defined and the level of effort desired can be identified and agreed upon in advance of performance. [Ref.4 :sec. 16.207]

In this contract type, the financial risk to the contractor is minimal since payment is based on effort expended and not results achieved.

C. INCENTIVE CONTRACTS

Incentives can be defined as promises of reward or penalty contingent upon specified performances by both parties. Thus, Incentives can be motivations for contractors to improve technological progress can provide cost saving. Most incentive contracts include only cost incentives, which take the form of a incentive sharing formula. Incentive contracts are appropriate when a firm-fixed-price contract is not appropriate and the required supplies or services can be acquired at lower costs and, in certain instance, with improved delivery or technical performance, by relating the amount of profit or fee payable under the contract to the

contractor's performance. [Ref.4 : sec.16.4]

There are two principal types of incentive contracts; (1) fixed-price-incentive and (2) a cost-plus-incentive fee contract.

1. Fixed-Price Incentive Contract (FPI)

This type of contract is generally used when a reasonable target price can be established but exact pricing is impossible without payment of a contingency. There are two types of FPI contract; firm target and successive targets. Both provide for adjusting profit and establishing the final contract price by formula based on the relationship of final negotiated total cost to total target cost. The following elements are negotiated into the original contract :

- (1) target cost
- (2) target profit
- (3) ceiling price
- (4) share ratio for establishing the final profit and price

After performance of the contract, the final contract price is established in accordance with the formula. The share ratio should reflect the relative risks involved in performance of the contract. Thus it may be appropriate to establish a share ratio which provides for the contractor to assume a considerable, or major, share of the risk and cost responsibility. The share ratio is expressed in the same manner as in the other types of contracts with the government number listed first. A typical share arrangement might be 90/10, 80/20, etc.

2. Cost-Plus-Incentive-Fee Contract (CPIF)

This contract type is a cost reimbursement contract, with provision for a fee adjusted by a formula in accordance with

the relationship that total allowable costs bear to target cost. It is similar to the FPI contract, but there is no ceiling price. Under CPIF contract, there is negotiated initially a target cost, a target fee, a minimum and maximum fee, and a fee adjustment formula. After performance of the contract, the fee payable to the contractor is determined in accordance with the negotiated formula.

This type of contract is suitable for use primarily for development and test when cost unknowns are common. The purpose of the CPIF contract is to provide an incentive for the contractor to manage contract costs effectively and thereby achieve the maximum allowable fee.

D. COST-REIMBURSEMENT CONTRACTS

In cost-reimbursement contracts, the Government promises to pay all (allowable, allocable, and reasonable) costs incurred on the contract.[Ref.5] This form of payment requires the contractor to disclose and submit all cost records and accounts pertinent to the contract to the Government. Like firm-fixed price contracts, the contractor promises to make his best efforts to perform the desired work. These contracts establish an estimate of total cost for the purpose of obligating funds and establishing a ceiling that the contractor may not exceed without the approval of the contracting officer.

1. Cost-Plus-Award-Fee Contract (CPAF)

This type of contract was pioneered by NASA when the agency was purchasing highly complex hardware and professional service in support of the space program. [Ref.11: p.286] The CPAF contract is a cost reimbursement type of contract with special fee provision. It provide a means of applying incentives in contracts which are not susceptible to finite

measurements of performance necessary for structuring incentive contracts. The CPAF contract is appropriate for : level of effort contracts for performance or services where mission feasibility is established but measurement of achievement must be by subjective evaluation rather than objective measurement; and work which would have been placed under another type of contract if the performance objectives could be expressed in advance by definite milestones, targets or goals susceptible of measuring actual performance. The contract should provide for evaluation at stated intervals during contract performance, so that the contractor will periodically be made aware of the quality of his performance and will know in which areas improvement is expected. [Ref.4:sec.16.404.2]

The fee established in a CPAF contract consists of two parts: (1) a fixed amount (base fee) which does not vary with performance, and (2) an award amount (award fee), in addition to the fixed amount, sufficient to provide motivation for excellence in contract performance in areas such as quality, timeliness, ingenuity, and cost effectiveness. The amount of award fee to be paid is based on a subjective evaluation by the government of the quality of the contractor's performance, judged in the light of criteria set forth in the contract. The manner of criteria used and the requirements which are represented will differ widely from one contract to another. The decision that award fee has been earned is based on the reports of performance made by the government personnel knowledgeable with respect to the contract requirements. This decision is a unilateral determination made by the government not subject to the Disputes clause of the contract.

2. Cost-Plus-Fixed-Fee Contract (CPFF)

The CPFF contract is a cost-reimbursement contract which provides for the payment of a fixed fee to the contractor. The fixed fee once negotiated does not vary with actual cost, but may be adjusted as a result of any subsequent changes in the work or services to be performed under the contract. [Ref.4:sec. 16.306]

Because the fixed fee does not vary in relation to the contractor's ability to control costs, the CPIF contract provides the contractor with only a minimum incentive for effective management control of costs. This type of contract is used primarily in research projects and exploratory studies where the level of effort required to achieve success, if it can be achieved at all, is unknown.

3. Cost-Sharing Contract

This is a cost reimbursement type contract, for use in research and development procurement, under which the contractor is reimbursed only for agreed portion of allowable costs. Generally, the basis for the contractor's agreement to absorb a portion of the cost is expectation of compensating benefits.[Ref.6]

4. Cost Contract

A cost contract is a cost reimbursement contract in which the contractor receives no fee. A cost contract may be appropriate for research and development work, particularly with nonprofit institutions, or other non profit organizations and for facilities contracts. [Ref.4:sec. 16.302]

Nonprofit institutions, such as universities, usually do research work for both government and industry, without the objective of making a profit. Such research is done under cost type contracts without a fee. Because universities do

much of the nation's pure research, as distinguished from applied research done by industry, a grouping number of contracts of this type are being used. Naturally, the universities recover all overhead costs, which generally include facilities costs and remuneration for personnel who work on the contracts. In recent years, high technology firms have increased their use of this contract type.

5. Time and Material Contract

A time and materials contract provide for acquiring supplies or services on the basis of (1) direct labor hours at specified fixed hourly rates that include wages, overhead, general and administrative expenses, and profit and (2) material at cost, including, if appropriate, material handling costs as part of material costs. [Ref.4:sec.16.601] A variation of the time and materials type of contract is called a labor-hour contract. In this type of contract, materials are not supplied by the contractor, however, other costs are agreed to as in time and materials contracts. The time and materials contract is used only where it is not possible at the time of placing the contract to estimate the extent or duration of the work or to anticipate costs with any reasonable degree of confidence. Particular care should be exercised in the use of this type of contract since its nature does not encourage effective management control. Thus it is essential that this type of contract be used only where provision is made for adequate controls, including appropriate surveillance by government personnel during performance, to give reasonable assurance that inefficient or wasteful methods are not being used.

6. Letter Contract

A letter contract is a written preliminary contractual instrument that authorizes the contractor to begin immediately manufacturing supplies or performing services. The contractor can prepare drawings, obtain required materials, and start actual production. Under letter contracts, the contractor is guaranteed reimbursement for costs up to a specific unit.

E. SUMMARY

The type of contract determines how the risk for cost of performance is shared between the parties. Selection of the appropriate contract type for the particular procurement is one of the most important decisions for a contracting officer. Contract types most likely to motivate contractors to perform at optimal levels and to best service the Government's interest shall be chosen. The FAR provides the contracting officer with many factors to consider in selecting and negotiating the contract type. They include the following:

- (1) price competition
- (2) price analysis
- (3) cost analysis
- (4) type and complexity of the requirement
- (5) urgency of the requirement
- (6) period of performance or length of production run
- (7) contractor's technical capability and financial responsibility
- (8) adequacy of the contractor's accounting system
- (9) concurrent contracts
- (10) extent and nature of proposed subcontracting

Under the FAR, there are three basic categories of contracts authorized for use: fixed-price, incentive and cost-reimbursement contracts. In fixed-price contracts, the

contractor has the obligation to deliver a product on time or perform a service in accordance with the terms and conditions of the contract. Fixed-price contracts are not practical when some uncertainty in design, the specifications, or the cost of performance exists. In these circumstances, incentive or cost-reimbursement contracts must be used in set forth in the FAR.

Incentive contracts are appropriate when a significant amount of uncertainty exists regarding the level of effort and cost required to accomplish the task successfully. These contracts provide contractors with motivation so as to enhance contract performance and product quality ensuring that contractors are rewarded for good performance and quality assurance, advanced schedule. Thus, incentive contracts properly applied and with a contractor who is motivated by the incentives, can be powerful tool to challenge industry to superior performance.

Cost-Reimbursement contracts are used only when it is not appropriate to use any type of fixed-price or incentive contract without including a large contingency fee. Under these types of contracts, contractors are reimbursed for all allowable incurred costs to the extent prescribed in the contract. This differentiates cost type contracts from fixed-price contracts. In all of the fixed-price contracts, the actual costs incurred by the contract have no effect on the Government agreement to pay a price equal to the firm price specified in the contract. Therefore, relating to control of the costs of performance, the contractor shall avoid a loss or make a profit under the fixed-price arrangement. On the other hand, under a cost-type arrangement, the level of actual costs incurred is mostly affected by both the contractor's obligation to perform and the Government's willingness to reimburse the expense of that

performance or to continue reimbursing the contractor for costs incurred in excess of that estimated amounts. Generally, the cost type contract requires that contractor's accounting system must be adequate for determining cost applicable to contract, and contractor will be subject to surveillance to assure use of efficient methods and effective cost controls.

The FAR provides a contracting officer with wide variety of contract types available. But, in some aspects, the language of the FAR is subject to interpretation. Therefore, the contracting officer's decision for selecting an appropriate type of contract pertinent to the particular contract requires an acute sensitivity to acquisition environment, the organization and personnel involved, and participants' fully understanding of the plans, processes and special factors affect risk and uncertainty.

III. KOREAN DOD CONTRACT SYSTEMS

A. CONTRACTING SYSTEM OF KOREAN DOD

Korean DOD procurement is procurement by regulation. Unlike the U.S., Korean DOD regulations applicable to contracts for acquisition or procurement are differently applied according to the types of supplies. In general, supplies acquired by Korean DOD are categorized into two types: (1) general supplies and (2) defense supplies. The general supplies which are commercial type items, refer to all supplies acquired by Korean DOD except the defense supplies. The defense supplies are military items which can be purchased from defense industrial firms. This categorization of supplies purchased by the Korean DOD results from the particular procurement environment which characterizes exclusive sales contracts. In general, the defense industry is characterized by monopolism with high risk and uncertainties of cost, performance and delivery. The Government is a unique customer that requires contractors to invest additional long-term capital for research and development, mass production facilities and to rigid quality control systems. These conditions can lead to a marketplace with very few willing participants--a monopolistic marketplace. Under a monopolistic environment, it is difficult to ensure that the procurement will be conducted by the use of competitive negotiation. In the procurement of general supplies which are related to the full scale implementation of commercial business practices, suppliers can reduce cost, performance and delivery risks. Thus the Government can acquire products needed at a fair and reasonable price through price competition. This includes best value contracting, which presents low price, high quality and quick response.

There are two basic categories of current contract regulations related to government procurement. A procurement of general supplies is regulated by the Budget and Accounting Act, the Contract Treatment Regulation which is the Ministry of Finance (MOF) Directive, and the Expected Price Computation Principle.

The Budget and Accounting Act was established in 1921 to provide the Government with instructions and guidance for the compilation and commitment of the budget. Thus, Government procurement, a major part of the budget, is regulated by this law. Additionally, for the Government to acquire general supplies, the Contract Treatment Regulation and Expected Price Computation were established in order to meet the requirements of effective, economical contract execution. The Government procurement of general supplies requires full and open competition in a free market. In a free market, more suppliers will enter based on the belief that there is a great potential for profits. It is obvious that as many suppliers enter the market, they will lower their price in order to get a contract award. Thus, the general supplies are usually acquired in competitive markets, resulting in the lowest contract price, and consequently creating a significant savings to the Government while adequately filling the Governments needs.

Meanwhile, the Korean Government established a set of regulations for the acquisition of defense supplies, such as the Special Enforcement Act for Defense Industry, the Contract Treatment Regulation for Defense Industry (a DOD Directive), and the Cost Computation Standard for Defense Supplies.

It is the particular characteristic of Korean DOD contracting system that the Korean Government has established and implemented separate regulations for defense supplies. Concerning current regulations, there exist distinctive

differences in cost computation methods between defense supplies and general supplies in that who and how to decide rates of a indirect cost, such as indirect labor rate, indirect overhead rate, general and administrative(G&A), and profit. In defense supplies, the Minister of Defense determines all indirect cost rates which are published annually.

In general supplies, the profit is applied based on the rate determined by the Minister of Finance, and other indirect cost rates as determined by the Head of Supply Department within Department of Defense. It is the Korean DOD policy that the Government reimburses all incurred costs on the contract for the defense supplies to the contractor, and pays a preset price on the contract for the general supplies. This policy illustrates that the Government has a tendency to protect the defense industrial firms for the purpose of national security. Further, the Government designates one, or two defense industrial firms in accordance with business type for the acquisition of defense supplies. The designation of defense industrial firms is stipulated in the Special Enforcement Act for Defense Industry.

The defense industry firms are appointed by the Minister of Commerce and Industry with the deliberation of the Minister of Defense In accordance with this act. [Ref.7 : sec.5] This creates a non-competitive contract environment and establishes weak industrial base. Because of the existing vulnerable defense industrial base, the Korean Government was to become so dependent on a very small number of defense industrial firms that their ability to produce a weapon system or other military item deemed critical to national security was jeopardized. Some contractors are driven by patriotism but most recognize that there are profits to be earned through Government contracts. The risk of buying supplies from

single or dual sources affects the methods of procurement: sealed bidding, negotiation. One consequence is that most Government contracts for the acquisition of defense supplies have been awarded by the non-competitive negotiation, not by competitive bidding. More specifically, current Government regulations implicitly allow contracting without full and open competition. Thus the Government interest in obtaining the best possible products and services at the best possible prices will be seriously injured. As another consequence, the Government has assumed a high degree of cost risk. The Korean DOD has paid all incurred costs during contract performance to the contractor without substantial analysis of actual contract cost data.

In the United States, all contracts with U.S. Government agencies must comply with the Cost Accounting Standards (CAS) and Cost Principles which are incorporated into FAR. The FAR Part 30 lists nineteen cost accounting standards. They are designed to ensure that companies dealing with the U.S. Government conduct their accounting practices in a known or identifiable fashion such that government personnel can check each contractor's financial/accounting records for determining the reasonableness of various costs. Meanwhile, the Korean Government failed to establish a set of guidelines, such as CAS or the Cost Principles, for contracting officers to determine the adequacy of a contractor's cost estimating system. If a contracting officer can not detect a contractor's cost overrun, he cannot prevent overpriced contracts, and in turn, a waste of defense funds. It is true that the Korean DOD typically pays all incurred costs during contract performance to the contractor without any cost analysis or with ineffective cost analysis. This is usually because the contracting officer does not select a contract type that would allow for cost analysis. Of the various

contract types described in Korean regulations, a few are applied only to the defense industrial supplies, while the government acquires general supplies through price competition or firm-fixed price contracts only.

A contracting officer should know that selection of right type of contract can result in significant cost savings and is in the best interest to the Government. Moreover, Government regulations should provide contracting officers with adequate authority and detailed instructions for the selection of a contract type.

B. CONTRACT TYPES OF KOREAN DOD

The Korean Government has some alternative types of contracts which can be used to accomplish best value buying. There are eight types of contracts applicable to the acquisition of defense supplies and two types of contracts that can be used for general supplies. As mentioned before, the Korean Government regulations for contracts are subject to the types of supplies government wants to buy. Two major regulations, Special Enforcement Act for Defense Industry, and Contract Treatment Regulation for Defense Industry were established by the Government for the purpose of governing DOD contracts for the acquisition of defense supplies, services or research and development(R&D). They were also issued to authorize various contract types from which a contracting officer can choose.

The alternative types of contracts set forth in those two regulations can be divided into two broad categories, as follows.

1. Fixed-price contracts

- * firm-fixed price contract
- * fixed-unit cost contract

2. Cost-reimbursement contracts

- * fixed-price with redetermination contract
- * cost savings-reimbursement contract
- * fixed-price for special cost items contract
- * fixed-price incentive contract
- * general cost-reimbursement contract
- * cost-plus-fixed fee contract

The contract types above can be applied only to the contract for acquisition of defense supplies. On the other hand, there are two types of contracts available for the contract for the acquisition of general supplies under the Budget and Accounting Act. In addition to the two contract types described in the Budget and Accounting Act, the Korean DOD allows a contracting officer to use six more contract types on the defense supplies contracts.

In the United States, all contract types set forth in the FAR are commonly applied to all Government contracts. Compared to the U.S. use of contract types, the Korean Government has established several unique contract types, such as the fixed-unit cost contract, the fixed-price for special cost items contract, the cost-plus-fee contract, the cost savings-reimbursement contract, and the general cost reimbursement contract. They are described in the latter part of this chapter.

C. PROBLEMS OF USING CURRENT CONTRACT TYPES

The researcher interviewed individuals in the Department of Supply within the Korean DOD. As a result of these interviews, it became apparent that two problems exist relating to the use of contract types in the Government.

(1) Although two regulations provide a contracting officer with various contract types, the language of the

regulations is subject to interpretation. There is ambiguity in the definition, concept, and applications of each contract type in the regulations.

(2) The use of a general cost-reimbursement contract specified in the regulations is preferred by both the Government and contractors rather than other types of contracts. On occasion, an intended contract type is modified because of a contracting anxiety driven by frequent audit and investigations.

In the researcher's opinion, the first problem is a result of the ambiguous wording in the regulations. Government procurement regulations seriously effect the efficiency and effectiveness of a large portion of Government contracts. Considering the sheer magnitude of DOD contract expenditures or the large volume of business with government contractors, the role of Government regulations can be significant.

Basically, DOD procurement personnel and Defense contractors are required to become familiar with the Government methods of doing business and with contents of the regulations. The Government process may be complex and difficult to master. Thus Government contract regulations should be clearly prescribed and more detailed in order to reduce the misinterpretation and pitfalls that may arise from the vague language of regulations. The Government procurement regulations are also critical in that conflict and contractor's protests may be created by the ambiguous language of regulations. Therefore, it is necessary that Government regulations covering DOD contracts should be drafted with definite language. Current Korean DOD regulations contain the potential for different interpretations which can lead to varying application of the regulations to DOD contracts. It is recognized that the regulations left out many definitions

of contract terminology and failed to classify the contract types distinctively in terms of the concepts, applications of types of contracts. This makes it difficult for a contracting officer to understand the content of regulations and to decide the best contract type for the contract. These results may lead to additional pressure being placed on a contracting officer to be knowledgeable in contract types concerned. This increased work load may cause great delays in executing his contract and make it difficult to expect an already overburdened contracting officer to perform his duty adequately.

There is an imperative need for the systematic restructuring and rewriting of the regulations. Korean DOD regulations should be meaningful, more definitive and more detailed guidance for a contracting officer to facilitate effective management of DOD contracting operations or control the policies and practices of the Government contractors. Consequently, these improvements would result in less adversarial relationships and more profitable and efficient contract implementation.

Based on the interview conducted by the researcher, the second problem is primarily related to the Government cost control. Selection of an appropriate contract type is required before the contracting officer can perform cost analysis or review a contractor's cost estimating system. A cost estimating system is the policies, procedures, and practice used by contractors to generate cost estimates and other data included in contract price proposals. The Government contracts require contractors to maintain an appropriate cost estimating system and to submit accurate, complete, and current cost and pricing data. To answer the concern that contractor's inefficient cost estimating systems can increase contract prices, Government procurement

regulations should include detailed standards or rigid, specific regulatory guidance contractors should comply with.

In the case of the Korean Government, since there are so many undesirable non-competitive contracting situations, it is absolutely critical that DOD regulations establish stringent rules or requirement governing contractor estimating systems. Additionally, contracting officers and contract auditors should fully comply with them. Therefore, every contracting official in DOD is expected to attain an appropriate level of skill for evaluating cost and price data and negotiating price.

Among DOD regulations, the Cost Computation Standard for Defense Supplies (CCS) provides regulatory guidelines for governing contractor estimating systems. The CCS was issued by the Korean DOD in order to prohibit Government contractors from overstating contract prices. Cost and pricing data submitted by a contractor to the Government should comply with the requirements pursuant to CCS. This researcher found that it is generally recognized that there is a lack of adequate standards in current DOD regulations and the CCS should be further developed. Interviewees in DOD positions stated that the Korean DOD should establish criteria for determining allowable, allocable costs, and regulations should include the definition of cost items allowed, the cost pools and the permissible allocation bases. Current regulations do not provide sufficient, detailed guidance for contracting officers so that they can become experts in cost or pricing analysis. This situation also makes it difficult for contracting officers to select an appropriate contract types for a contract. Recent DOD contract price mechanisms have become more complex, as the complexity of the items being purchased increases. Incentive and cost-reimbursement type contracts require contracting officers and contractors to make intensive

efforts to reach pricing agreements. These types of contracts have also become a major controversial issues. The audit for DOD contracting activities is conducted annually by the Korean General Accounting Office (GAO) headed by the Comptroller General and intermittently by the DOD itself audit team headed by the Minister of Defense. The audit and investigation activities of the GAO and DOD audit teams have greatly impacted on DOD procurement process.

Generally, audit objectives on negotiated contracts include cost issues. The GAO primarily expresses its concerns as follows:

- (1) the selection of contract type;
- (2) a review of the contractor's cost and pricing data;
- (3) a comparison of the contractor's initial cost estimates with his cost experience;
- (4) a review of incurred cost for cost-reimbursement type contracts.

Therefore, increased oversight and audit action relevant the deficiencies in DOD regulations would lead contracting officers and contractors to prefer cost-type contracts. They would be tempted to make an imprudent decision in the selection of a contract type to avoid being evaluated as poor performance assessment. Such temptations would become more pronounced if contracting officers are frequently transferred. Regarding the above two problems, it is very important is that DOD regulations prescribe contract types with definite language so that contracting officers can fully understand the concept of each type of contract and its applications.

1. Firm Fixed-Price Contract (FFP)

This type of contract is used when a contracting officer can establish fair and reasonable prices and it is expected

that there is no subsequent change in contract price during the contract performance.[Ref.7:sec 32.1]

The FFP contract shall be used only when the contracting officer establishes the estimate of expected costs of performance on the basis of available cost or pricing information.[Ref.8: sec 2.4]

This is simply an agreement for the Government to make payments of a fixed amount as specified in the contract for the timely delivery of an end-item or defined service in accordance with the contract specifications. However, current DOD regulations do not provide a definition of FFP and allow a contracting officer to use FFP contracts under limited conditions. This may make it difficult for a contracting officer to understand the FFP concept and to distinguish FFP from other contract types. Further, this type of contract can be used if the contracting officer can establish fair and reasonable price on the basis of reasonably definite functional or detailed specifications. The FFP contract can provide certain advantages to the Government and the contractor. The FFP contract gives the contractor the highest possibility for substantial profits to produce efficiently, and also minimize Government administration and audit controls. In addition, a fixed-price contract can be used despite serious doubt concerning the stability of the market or labor conditions. The fixed-price contract with economic price adjustment, or escalation set forth in the FAR can be a good example. It provides for equitable adjustment or other revision to the contract price upon on the occurrence of stated contingencies. Korean DOD regulations should provide a contracting officer with more flexibility to choose FFP contract by adding new clauses, or provisions.

2. Fixed-Unit Cost Contract (FUC)

This type of contract is used when the Government buys items that have been purchased recently by the Government (within two years) and that have a negotiated contract for less than 20,000,000 won. The contracting officer determines contract price on the basis of past unit cost data rather than cost estimates. However, the Government has yet to use this type of contract.

The Table 1. below, from Logistic Supply Headquarters, presents the awarded contracts in terms of number of actions and values in won in Fiscal Year (FY) 1992.

(unit: a hundred million won)

Value of Award	below 20,000,000	over 20,000,000	Total
Action(%)	15(4)	391(96)	406(100)
Won(%)	1(0)	10,986(100)	10,987(100)

Table 1. Contract Awards in FY 1992

There were very few contracts applicable to the fixed-unit cost contract. The data shows that this type of contract is impractical to current contracting situations in that the contract price applicable to FUC contracts is too low and it does not allow cost adjustment according to the fluctuations of the marketplace after past contract award. Therefore, this type of contract fails to give the contractor favorable incentives.

3. Fixed Price with Redetermination Contract (FPR)

This type of contract may be used for the acquisition of full scale production soon after initial production if there is a lack of time to establish expected costs.[Ref.8:sec.11.1]

Under an FPR contract, when negotiated, a temporary estimated price is established initially. After some periods of performance, the incurred costs are analyzed, future costs are estimated and a fixed price is determined for the remainder of the contract.[Ref.8: sec.12.1]

With regard to the above provisions prescribed in the regulations, a redetermination point and requirement for specifying a redetermination point in the contract document are not included. The delay of price redetermination may lead the Government to assume the great cost risk. The earlier in the life of contract that price redetermination can be made, the more effective the FFP is. Thus, the Government should negotiate with contractor when price redetermination can be made and then include that in contract documents. The regulations also prescribe inappropriate application of the FPR. Award of a contract for the acquisition of full scale production supplies without evaluation of a result of initial production is not in the Governments best interest, because the Government may assume too great a cost risk. Thus, it is impractical that the FPR contract apply to the acquisition of initial production items.

4. General Cost-Reimbursement Contract (GCR)

This type of contract is used for investigation, study or initial production in a specific research and development area.[Ref.8:sec.18] This type of contract provides that the contractor shall be paid for all allowable cost without limitation plus a fee. The fee is a percentage of the all allowable cost. The profit rate to be applied is one which the Minister of Defense designates. The rate is annually updated pursuant to the Cost Computation Standard for Defense Industry. It is similar to the Cost-Plus-Percentage-of-Cost contract which is outlawed for use by the U.S. Government.

This is the most undesirable of all types of contracts. The contractor most likely to increase his costs in order to obtain greater profits. As the contractor increases actual costs, the fee will be increased proportionately. Despite of the obvious fallacy in the concept of, "the higher the cost the greater the profit", this type of contract has frequently been used for research and development and full scale production supplies.

It is true that this type of contract does not provide the contractor with any incentives for cost savings. Adversely, it may cause a contractor to overstate the contract price unless the Government controls the contractor's cost estimating system effectively. Regarding to these disadvantages, it is desirable to outlaw this contract type or if necessary, the applications of this contract type should be greatly limited just only for research and development or initial production.

5. Cost Savings Reimbursement Contract (CSR)

A cost savings reimbursement contract is used when a contracting officer or the contractor expects cost savings during contract performance through technical development or efficient management operations, and a contracting officer can establish an accurate expected cost.[Ref.8:sec.5] Both the contracting officer and the contractor can propose a cost savings plan by mutual agreement and the proposal should be submitted to the Inspection Agency under Defense Science Research Center for technical evaluation prior to negotiation. If approved by the Inspection Agency, the proposal is submitted to the contracting officer. The formula for determination of reimbursement depends on who proposed the cost savings plan. If the contractor proposes the cost savings plan, the contractor is reimbursed all of the cost savings,

and if a contracting officer, the contractor is reimbursed 25 percent of the cost savings. Thus the formula for final price is:

$$\text{final price} = \text{negotiated price} - \text{cost savings} + \text{reimbursement.}$$

During the performance of the contract, the Inspection Agency reviews the contractor's efforts to meet the cost savings plan. Upon completion, the contracting officer is to compute the amount of cost savings resulting from contractor's efforts and then decide the amount of reimbursement to be paid. The contracting officer has to justify his computations of cost savings and reimbursement. Thus, the contracting officer would avoid choosing this type of contract.

Actually, the justification of cost savings and reimbursement computed will increase the work load for the contracting officer, and the contracting officer may assume the risk of a disciplinary dismissal if he fails to justify his decision.

6. Fixed-Price for Special Cost Items Contract

This type of contract may be used where the contracting officer can not compute costs of all cost items of a cost pool. [Ref.7:sec.32.4] Under this type of contract, the costs of special cost items which can be computed by the contracting officer are negotiated as a fixed price, and the costs of the rest of a cost pool are added to the final price after completion of the contract. The contracting officer determines the reimbursement costs for the special cost items on the basis of cost and pricing data submitted by the contractor during the performance of the contract. With regard to the application of this type of contract, it is authorized to be use when the cost computation for some cost items is possible. This provision makes it difficult for a

contracting officer to differentiate this type of contract from the general cost reimbursement contract. According to the regulations, both the fixed-price for special cost items contract and the general cost-reimbursement contract can be used whether or not a contracting officer can compute costs of all cost items. In cases where the contracting officer cannot compute costs of some of the cost items of a cost pool, he can use a fixed-price for special cost items, or a general cost-reimbursement contract despite the fact that they are different types of contracts with different administrative requirements. To make a clear distinction between these contract types, this type of contract should be allowed to be used when the contracting officer can compute costs of most of the cost items of a cost pool, not just some of the cost items of a cost pool.

7. Cost-Plus-Fixed Fee Contract (CPFF)

The CPFF contract provides for reimbursement of all actual costs and payment of a fixed-fee regardless of the contractor's actual cost experience. The fixed-fee cannot exceed the ceiling rate determined by the Minister of Defense. This contract type is used for contracts greater than ten billion won (reimbursed cost), or it is used when a fixed-fee is required because of a special production process or special business condition.[Ref.8: sec.15]

In the past, this type of contract has never been used by the Korean DOD. This indicates that there are some problems in the regulations describing this type of contract. Under the regulations, the application of this type of contract is inappropriate. More specifically, it is difficult for the Government to justify the establishment of a fixed-fee in advance and to establish the criteria for determining the fee. Thus, the applications of this type of contract should be

limited. This contract type may be appropriate to the contract for large size business or research projects and initial production where there is a substantial degree of uncertainty in the performance cost of the contract effort.

Generally, this type of contract offers no incentives, thus a contractor tends to minimize his incentive to perform in a cost efficient manner. Hence its use is discouraged and should be used only as a last method.

D. SUMMARY

Considering the unique Korean DOD contracting environment characterized as non-competitive, the acquisition and contracting process must be able to ensure that the Korean DOD procures high quality defense supplies at reasonable prices, and with a quick response. The Korean DOD can no longer bear the risks of having incidents of waste, fraud, and abuse of scarce defense funds. Establishing effective contract regulations is a good method to reduce the cost of acquiring supplies and services.

Furthermore, Contract types to be used must be employed to accomplish best value procurements. Selection of an appropriate contract type is a critical element to effective procurement in the Government.

However, Korean DOD regulations for contract types need to be modified for the purpose of improving the contracting system. As previously mentioned, contract types set forth in DOD regulations are divided into two broad categories: fixed-price contracts, and cost reimbursement contracts. Current fixed-price contracts require more flexibility so that they can be used even though there are uncertainties, or economic fluctuations in labor or material costs during the performance of the contract. Under current regulations, the contracting officer cannot use fixed-price contracts, because

he cannot provide price adjustments necessary to protect the contractor and the Government. For this reason, the Government and the contractor typically resort to the use of cost-reimbursement contracts. In cost-reimbursement contracts, DOD regulations leave out many definitions of terms related to contract types. Additionally, the regulations do not specify each contract type with distinct language. The contracting officer must make greater efforts to understand what each contract type is, when it can be used. It is difficult for the contracting personnel to differentiate between cost-reimbursement types. For example, as mentioned before, both a general cost-reimbursement contract and fixed-price for special cost items contract can be used in same situation. This may cause contracting personnel to have difficulty in the selection of appropriate contract type. It may also create unintended delays in the contracting process. Concerning effective contract execution, the regulations should define and describe each contract type precisely so that the contracting officer can choose best contract type appropriate to the particular contracting environment. In a word, the contracting system must not allow a lack of understanding of the regulations to defeat the benefits of best value buying.

IV. CONCLUSIONS AND RECOMMENDATIONS

A. CONCLUSIONS

South Korea exists under a unique set of internal and external conditions. Korea has had to cope with a continuing serious threat to its national security. Under these circumstance, the primary concern for the Korean Government is the nurturing of a defense capability which will adequately counter possible aggression by an unaided North Korea. Thus, Korea has endeavored to strengthen its independent defense capability. In 1973, the laws on military supplies were passed, under which various measures were taken to foster and support defense industries. They include two regulations which prescribe contractual favors, such as Special Treatment Act for Defense Industry and Contract Treatment Regulation for Defense Industry.

Korea's defense industry has developed on the basis of national economic development plans fully utilizing the civil industrial facilities within the country. In addition, the Korean Government has designated defense firms for the acquisition of defense supplies. The intent of two regulations and designation of defense firms was to ensure that DOD acquires defense supplies from defense firms that could produce the supplies cost-effectively through use of proper contract type described in the regulations.

However, as a result of this study, this researcher reached the conclusion that there are several problems in the regulations applicable to DOD contracts for defense supplies. One of most serious problems is that while the Government has made great efforts to accelerate the development of the defense industry, it has created a non-competitive contracting environment. Specifically, as part of DOD's efforts to accelerate the development of defense industry, excessive

protection and contractual favors were given to defense firms. In addition, the DOD's designation of defense firms has allowed little room for private initiative and creativity. The DOD lacks the competitive advantages that may preclude the wasting of defense funds stemming from increases in contract prices.

The second problem has to do with existing ambiguity and inappropriateness if provisions addressing the concepts, applications and limitations of contract types. This may make it difficult for contracting officers to select an appropriate contract type suitable to a given contracting situation. Consequently, General Cost-Reimbursement Contracts and Firm-Fixed-Price Contracts are preferred by contracting officers and contractors because of the simple procedures and the reduced burden of frequent audits and investigations.

The third problem has to do with the fact that there are impractical types of contracts which create inefficient and ineffective DOD contracts. Those contract types should be either eliminated or limited their use. For example, Fixed-Unit Cost contracts are considered inefficient, uneconomical contract type and should be removed as an option. General Cost-Reimbursement Contracts which provide no incentives for cost savings should either be removed or strictly limited in their application.

The fourth problem stems from the lack of rules or standards to control contractor's cost accounting system. Since cost-type contracts are preferred by contracting officers and contractors, DOD pays all incurred costs to the contractors. DOD should establish effective, rigid rules to improve the fairness of contract price and determine the allowability of costs.

From above conclusions, it is clear that revisions of DOD regulations for contract types are necessary. However, it

should be noted that revisions to DOD regulations will not radically change the way DOD procurement is being done, and it will merely provide DOD contracting officials with more detailed, more comprehensive regulations to implement DOD contracts.

B. RECOMMENDATIONS

The following recommendations are proposed for revising the DOD contracting system.

1. Add provisions for definitions of contract terms, more specific applications and limitations of contract types to the Contract Treatment Regulation for Defense Industry

In current DOD regulations, definitions of contract terms related to contract procedures and contract types are excluded, such as the criteria for determining contract type, definitions of expected cost, etc. Consistent use of contract terms, and the clear criteria for their use would resolve the ambiguity in interpretation and implementation of DOD regulations.

2. Abolish the use of Fixed-Unit Cost Contract and enforce restriction on the use of General Cost-Reimbursement Contract

Since the Fixed-Unit Cost Contract does not reflect the fluctuation of the economic situation, it does not provide contractors with incentives, or enticement to use this type of contract. Thus it should be prohibited in DOD contracts. The General Cost-Reimbursement Contract makes the Government bear a great cost risk and, in turn, it results in abuse or the waste of scarce defense funds. Therefore, the use of General Cost-Reimbursement Contract should be allowed only for

research and development or contract for initial production supplies.

3. Provide more alternative contract types to be used, such as Fixed-Price Contracts with Economic Price Adjustment, Fixed-Price Contracts with Prospective Price Redetermination, and Incentive Contract Types which include Cost-Plus Incentive Fee contract, Cost-Plus-Award Fee Contract.

The government should provide contracting officers with flexible fixed-price contract which provide a firm price or in appropriate cases, an adjustable price. In some instances, fixed-price contracts providing for an adjustable price may be more effective rather than other cost type contracts protecting the contractor and the Government against significant fluctuation of economic price. Meanwhile, incentive contracts are appropriate when a significant amount of uncertainty exists regarding the level of effort required to accomplish the task properly. These types of contracts motivate contractors to improve contract performance or advance the date of deliveries. Thus, the Government should provide contracting officers with those flexible contract types to be used properly.

4. Provide additional rules or guidelines to determine price reasonableness and support cost realism.

Currently, the Government applies Cost Computation Standard for Defense Supplies to estimate an expected cost and evaluate the contractor's cost and pricing data to determine the reimbursement to be paid to the contractor. This standard is not enough to determine allowability of incurred cost in cost-reimbursement contracts. It is imperative that the Government establish additional rules, or standards, to ensure

the fairness of contract prices and prohibit contractors from overpricing.

APPENDIX

PROPOSED CHANGES TO THE CONTRACT TREATMENT REGULATION

Part 1. General Rule.

It is amended by adding definitions of words and terms.

1.2 Definitions of Words and Terms.

This part defines words and terms commonly used in this regulation. Other terms are defined in this part or subpart with which they are particularly associated.

(1) **Contract** means a mutually binding legal relationship obligating the contractor to furnish the supplies or services (including construction) and the Government to pay for them. It includes all types of commitments that obligate the Government to an expenditure of appropriated funds and that, except as otherwise authorized, are in writing.

(2) **Contracting** means purchasing, renting, leasing, or otherwise obtaining supplies or services from non-Government sources. Contracting includes description (but not determination) of supplies and services required, selection and solicitation of sources, preparation and award of contracts, and all phases of contract administration. It does not include making grants or cooperative agreements.

(3) **Contracting office** means an office that awards or executes a contract for supplies or services and performs post award functions not assigned to a contract administration office.

(4) **Contracting officer** means a person with the authority to enter into, administer, and make related determinations and findings. The term includes certain authorized representatives of the contracting officer acting within the limits of their authority as delegated by the contracting officer.

(5) **National defense** means any activity related to programs for military or atomic energy production or construction, military assistance to any foreign nation, stockpiling, or space.

(6) **General supplies** refers to the commercial type items which can be acquired by Department of Defense excluding the defense supplies.

(7) **Defense supplies** means military items which can be acquired from defense industrial firms.

(8) **Expected cost** means the determined cost by a Contracting officer in order to contract fixed types of contracts prior to negotiation.

(9) **Reimbursed cost** means the final redetermined cost to be paid by the Government to the contractor for the contract performance on the basis of actual incurred costs, mostly in general cost-reimbursement contract types.

(10) **Reimbursed price** means the finally determined contract price for contract of cost-reimbursement contract types on the basis of reimbursed cost.

(11) **Contract price** means the total amount fixed by the contract (which could be amended) to be paid for complete performance of the contract.

(12) **Actual cost** means the amounts determined on the basis of costs incurred, as distinguished from forecasted costs.

(13) **Allocable cost** means a cost which is assignable or changeable to one or more cost objective in accordance with the relative benefits received or other equitable relationship.

(14) **Allowable cost** means any cost which can be included in prices, cost reimbursements, or settlements under the contract to which it is allocable. A cost which means the tests of (a) reasonableness, (b) allocability, and (c) consonance with Expected Price Computation Principle.

(15) **Reasonable cost** means a cost which in nature and amount does not exceed what would be incurred by an ordinarily prudent person in the conduct of competitive business.

(16) **Fair and reasonable price** refers to a price that is fair to both parties, considering the agreed-upon conditions, promised quality, and timeliness of contract performance. Although generally a fair and reasonable price is a function of the law of supply and demand, there are statutory, regulatory, and judgmental limits on the concept.

(17) **Contract type** refers to the term used to describe specific pricing arrangements employed for the

performance of work under contracts. Specific pricing arrangements expressed as contract types include fixed price contracts, and cost-reimbursement contracts.

(18) **Fixed price contract** means basic category of Government contract in which pricing arrangement is one involving an expected cost. Fixed price contract is usually awarded to the lowest responsible offeror. The force of competition ensures fair and reasonable pricing and protects the Government from paying too much.

(19) **Cost reimbursement contract** means basic category of Government contract in which the pricing arrangement is one involving the Government's payment of "allowable" cost incurred by the contractor during performance.

(20) **Cost or pricing data** means all facts as of the time of price agreement that prudent buyers and sellers would reasonably expect to affect price negotiations significantly. Cost or pricing data are factual, not judgmental, and are therefore verifiable. Cost or pricing data are more than historical accounting data; they are all the facts that can be reasonably expected to contribute to the soundness of estimates of expected costs and to the validity of determinations of costs already incurred.

1.3 Factors in selecting contract types.

To determine the best type of contract to use, the contracting officer should consider those factors in selecting and negotiating the contract type. They include the followings:

(1) Price competition. Whenever possible, contracting activity should be competed. Effective price competition results in realistic pricing, and a fixed-price contract is ordinarily in the Government interest.

(2) Price analysis. Price analysis, with or without competition, is the process by which the contracting officer analyzes proposed prices to determine whether the price offered is reasonable. It provides a basis for selecting the contract type, includes comparing proposed prices with such things as historical prices, market prices, and other competitive quotes.

(3) Cost analysis. Cost analysis involves the evaluation

of a contractor's cost and pricing data. These data are analyzed to determine the allowability and allocability of costs and the basis of Expected Price Computation Principle.

(4) Type and complexity of the requirement. The contracting officer assesses the degree of risk assumed by both parties. Complex requirements, particularly those unique to the Government, usually result in greater risk assumption by Government. The more complex and uncertain the requirement, the greater the risk that will probably be accepted by the Government.

(5) Urgency of the requirement. If urgency is a primary factor, the Government may choose to assume a greater portion of the cost risk of the contract, or it may offer incentives to ensure timely contract performance.

(6) Period of performance or length of production run. In times of economic uncertainty, contracts extending over a relatively long period may require economic price adjustment.

(7) Adequacy of the contractor's accounting system. Before agreeing on a contract type other than firm-fixed-price, the contracting officer shall ensure that the contractor's accounting system will permit timely development of all necessary cost data in the form required by the proposed contract type. This factor may be critical when the contract type requires price revision while performance is in progress, or when a cost-reimbursement contract is being considered and all current or past experience with the contractor has been on a fixed-price basis.

(8) Concurrent contracts. If the offeror holds other Government contracts, the contracting officer must determine what impact of those contracts will have on the proposed contract.

Part 2. Content and Scope of Contract.

2.1 Firm-Fixed Price Contract.

It is amended by adding the significance of firm-fixed price contract before application(2.1-2).

2.1-1 (Description) A firm-fixed price contract is not subject to any adjustment to its total price based on variation in the cost experience of the contractor in the performance of the contract.

2.2 Fixed-Price with Economic Price Adjustment Contract.

This type of contract is a substitute for fixed-unit cost contract.

2.2-1 (Description) A fixed-price contract with economic price adjustment provides for upward and downward revision of the stated contract price upon the occurrence of specified contingencies.

2.2-2 (Application) A fixed-price contract with economic price adjustment may be used when (1) the changes of conditions is expected during the performance, and (2) an expected cost can be established on the basis of the Cost Computation Standard for Defense Supplies. It should be noted that price adjustment of this type apply only to changes in labor rates and materials costs, not to overhead and profit and not to increases in the amounts of labor or materials. price adjustments based on labor and material costs should be limited to contingencies beyond the contractor's control.

2.3 Cost Savings Reimbursement Contract.

It is amended by adding the significance of this type before application(2.3-2).

2.3-1 (Description) This type of contract may be used to lead the contractor to reduce costs of the contract by the Government's promise to reimburse cost savings as a result of contractor's effort.

2.4 Fixed-Price Incentive Contract.

It is amended by adding the significance of this contract type before application(2.4-2).

2.4-1 (Description) A fixed-price incentive contract is a fixed-price contract that provides for adjusting profit and establishing the final contract price by a formula based on the relationship of final negotiated cost to total target cost. The final price is subjected to a price ceiling, negotiated at the outset. This type of contract may be used when a reasonable target price can be established but exact pricing is impossible without payment of a contingency.

2.5 Fixed-price with Redetermination Contract.

It is amended by adding the significance of this type before application(2.5-2), and changed by inserting below new paragraph at the end of 2.5-3.

2.5-1 (Description) A fixed-price with redetermination

contract may be used (1) when fixed-price contract can not be established, and (2) for providing prospective redetermination, at a stated time or times during performance, of the price for subsequent periods of performance.

2.5-2 (Application) A fixed-price with redetermination contract may be used in acquisition of initial production supplies or research and development. The contract may be provide for a ceiling price based on evaluation of the uncertainties involved in performance and their possible cost impact.

2.5-3 (Determination of contract price)

2.5-3-2 The price redetermination point in the 2.5-3-1 means the time which cost computation can be established after some periods of times or some amounts of production. The price redetermination point should be stated in the contract document with agreement of both parties.

2.6 Fixed-Price for Special cost Item Contract.

This type of contract is amended by adding significance before application(2.6-2), and by changing application.

2.6-1 (Description) A fixed-price for special cost item contract is one which determines contract price for special item which cost computation can not be established at the negotiation table. Such contract price for special items shall be determined after completion of the contract.

2.6-2 (Application) A fixed-price for special cost item contract may be used when a contracting officer can not compute costs of some cost items among cost pool.

2.7 General Cost Reimbursement Contract.

It is amended by adding significance and changing the application of general cost reimbursement contract.

2.7-1 (Description) A general cost reimbursement contract may be used when an expected cost computation can not be established, and contract price can be determine after completion of the contract on the basis of actual incurred costs. The contractor can be paid by the Government for all allowable costs.

2.7-2 (Application) A general cost reimbursement contract shall be used when (1) the contract is for research and development or initial production supplies, and (2) any other contract types can not be used.

2.8 Cost-Plus-Fixed Fee Contract.

It is amended by adding significance and changing the application of a cost-plus-fixed fee contract.

2.8-1 (Description) A cost-plus-fixed fee contract is a cost reimbursement contract which provides for the reimbursement of all allowable costs expended by the contractor, as well as payment to the contractor of fee which remains fixed, regardless of the contractor's actual cost experience.

2.8-2 (Application) A cost-plus-fixed fee contract may be used when (1) the contract is for performance of research and development and initial production supplies, (2) the contract price is 10 billion won or more, and (3) the cost computation can not be established.

2.9 Cost-Plus-Incentive Contract.

This type of contract is proposed to use as a specific type of contract.

2.9-1 (Description) A cost-plus-incentive contract is a cost-reimbursement contract that provides for initially negotiated fee to be adjusted later by a formula based on the relationship of total allowable costs to total target costs.

2.9-2 (Application) A cost-plus-incentive fee contract is appropriate for development and test program when (1) a contract price can not be determined as a fixed price, (2) it is possible to predict the extent which range of variance of foreseeable actual cost, and (3) a target cost and a fee adjustment formula can be negotiated that are likely to motivate the contractor to manage effectively. This type of contract also provides following contract factors which should be prescribed in contract document.

- (i) target cost
- (ii) target profit (usually 10% of target cost)
- (iii) target price
- (iv) share formula (85/15)
- (v) maximum profit (15% of target cost)
- (vi) minimum profit (7% of target cost)

Under this contract, the contractor is reimbursed all of his costs and does get at least a minimum fee even though there is a limitation on the maximum fee.

LIST OF REFERENCES

1. The Institute of Korean Studies, Korea Observer, Spring, 1994.
2. Department of Defense, R.O.K. Defense White Paper, 1992.
3. James Kitfield, "Future Vision: An Integrated Industrial Base," Government Executive, v.26, p.32, August 1994.
4. Federal Acquisition Regulation, U.S. Government Printing Office, Washington, D.C., 1984.
5. Alan W. Beck, Introduction to Contract Types, Defense Systems Management College, 1992.
6. Donald, William J. Ruberry, Government Contract Guidebook, Federal Publication Inc., 1987.
7. Special Enforcement Act for Defense Industry, Department of Defense, Seoul, Korea, 1973.
8. Contract Treatment Regulation for Defense Industry, Department of Defense, Seoul, Korea, 1973.
9. Yoo, Choong Keun, A Cost Analysis for Deciding Service Level in Korea Army with a Constraint for Single Period, Thesis, Naval Postgraduate School, June, 1990.
10. Whelan, John W., Federal Government Contracts, The Foundation Press, Inc., 1985.
11. Dobler, Donald W., Purchasing and Materials Management, McGraw-Hill, Inc., 1990.
12. Department of Defense Supplement to the Federal Acquisition Regulation, U.S. Government Printing Office, Washington, D.C., 1984.

INITIAL DISTRIBUTION LIST

	No. Copies
1. Defense Technical Information Center Cameron Station Alexandria, Virginia 22304-6145	2
2. Library, Code 52 Naval Postgraduate School Monterey, California 93943-5101	2
3. Professor Roger D. Evered, Code SM/Ev Department of Systems Management Naval Postgraduate School Monterey, California 93943-5000	1
4. Professor Mark W. Stone, Code SM/St Department of Systems Management Naval Postgraduate School Monterey, California 93943-5000	2
5. Professor Rebecca J. Adams, Code SM/Ad Department of Systems Management Naval Postgraduate School Monterey, California 93943-5000	1
6. Republic of Korea Library 320-919 P.O.Box 4, Bu Nam Ri, Du Ma Myon, Non San Gun, Chung Cheong Nam Do, Republic of Korea	1
7. Korea Military Academy Library 139-799 P.O.Box 77, Gong Reung 2 Dong, No Won Gu, Seoul, Republic of Korea	1
8. Lim, Heonkyo 626-7 Shinjum, Mapyung Ri, Yong In Eup, Yong In Gun, Kyung Gi Do, Republic of Korea	1